SWITCHED NOISE FILTER CIRCUIT FOR A DC-DC CONVERTER

ABSTRACT OF THE DISCLOSURE

A switched noise filter circuit for DC-DC converters which use the instantaneous output voltage to establish the converter's duty ratio. The converter cycles the switching element on and off for time intervals T_{on} and T_{off}, respectively. A switching control circuit includes a filter capacitance connected between the feedback node and ground, and a comparator which compares a feedback voltage V_{fb} with a fixed voltage V_{ref}; at least one of T_{on} and T_{off} is a "modulated" interval which is terminated when V_{fb} crosses V_{ref} due to the discharge of the filter capacitance. A switched noise filter circuit applies an offset voltage to V_{fb} during at least one of T_{on} and T_{off}, with the offset voltage disconnected from V_{fb} by the beginning of the modulated interval or shortly thereafter. When the offset voltage is properly applied, the effect of extraneous electromagnetic noise coupled into V_{fb} is reduced.